

REMARKS

Claims 1-28 are pending in this application. Reconsideration and allowance of the present patent application based on the following remarks are respectfully requested.

REJECTIONS UNDER 35 U.S.C. § 102

Claims 1-6, 14, 16, 18, 19 and 21-23 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,343,292 to Brueck et al. ("Brueck"). Applicant respectfully traverses this rejection.

Claim 1 recites a measurement device comprising, *inter alia*, "a projection system configured to project an image of the first pattern onto the second pattern; and a detector configured to measure an amplitude of at least one order of a diffraction pattern resulting from an interference of the second pattern and the projected image." Applicant respectfully submits that the cited portions of Brueck do not anticipate at least these aspects of claim 1.

The cited portions of Brueck disclose a method for using two diffracted beams 21a and 21b to provide an interference or fringe pattern to permit alignment of a wafer. While Brueck does teach using the interference between two diffracted beams, nowhere does Brueck teach a detector configured to measure an *amplitude* of at least one order of a diffraction pattern resulting from an interference of the second pattern and the projected image. Rather, Brueck discloses monitoring the phase of the fringe pattern as a direct measure of the alignment between the two patterns. (*See, e.g.*, column 2, lines 44-67 and column 4, lines 4-10 of Brueck). Brueck fails to disclose measuring an *amplitude* of at least one order of a diffraction pattern as recited in claim 1.

For at least this reason, Brueck clearly does not anticipate claim 1. Applicant therefore respectfully submits that claim 1 is allowable and that the rejection under 35 U.S.C. 102(b) be withdrawn.

Claims 2-6, 14, and 16 depend from claim 1, and, thus are considered patentable over Brueck at least by virtue of their dependency from claim 1, and for the additional features recited therein.

Claims 18 and 21 disclose similar features as provided in claim 1, and, therefore, are patentable over the cited portions of Brueck for at least similar reasons as provided above for claim 1 and for the features recited therein. Claim 19 is patentable over the cited portions of Brueck at least by virtue of its dependency from claim 18, and for the additional features

recited therein. Claims 22 and 23 are patentable over the cited portions of Brueck at least by virtue of their dependency from claim 21, and for the additional features recited therein.

Therefore, for at least these reasons, the rejection 35 U.S.C. 102(b) of claims 1-6, 14, 16, 18, 19, and 21-23 in view of Brueck should be withdrawn and the claims be allowed.

REJECTIONS UNDER 35 U.S.C. § 103

Claims 7, 15, 20 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Brueck. The rejection is respectfully traversed.

Claims 7 and 15 depend from claim 1, and, thus are considered patentable over Brueck at least by virtue of their dependency from claim 1, and for the additional features recited therein. For example, as noted above, Brueck fails to disclose or teach at least “a detector configured to measure an amplitude of at least one order of a diffraction pattern resulting from an interference of the second pattern and the projected image” as recited in claim 1. Thus, Applicant respectfully requests that the rejection of claims 7 and 15 be withdrawn and that claims 7 and 15 be allowed.

Claim 20 depends from claim 18, and, thus is considered patentable over Brueck at least by virtue of their dependency from claim 18, and for the additional features recited therein. For similar reasons as noted above, Brueck fails to disclose or teach at least the “detector configured to measure an amplitude of at least one order of a diffraction pattern resulting from an interference of the second pattern and the projected image” as recited in claim 18. Thus, Applicant respectfully requests that the rejection of claim 20 be withdrawn and that claim 20 be allowed.

Claim 24 depends from claim 21, and, thus is considered patentable over Brueck at least by virtue of their dependency from claim 21, and for the additional features recited therein. For example, as noted above, Brueck fails to disclose or teach a method comprising “measuring an amplitude of at least one order of a diffraction pattern resulting from interference between the second pattern and the projected image” as recited in claim 21. Thus, Applicant respectfully requests that the rejection of claim 24 be withdrawn and that claim 24 be allowed.

Claims 8-13 and 25-28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Brueck as applied to claims 1-7 and 14-24 above, and further in view of U.S. Patent No. 5,754,341 to Takata et al. (“Takata”). Applicant respectfully traverses this rejection.

Claims 8-13 depend from claim 1, and, thus are considered patentable over Brueck at least by virtue of their dependency from claim 1, and for the additional features recited therein. For example, as noted above, Brueck fails to disclose or teach at least "a detector configured to measure an amplitude of at least one order of a diffraction pattern resulting from an interference of the second pattern and the projected image" as recited in claim 1.

Even if Takata and Brueck are properly combinable, which Applicant does not concede, the cited portions of Takata fail to overcome the deficiencies of Brueck, namely disclosing or rendering obvious a detector configured to measure an amplitude of at least one order of a diffraction pattern, as recited in claim 1.

Accordingly, Applicant respectfully submits that claims 8-13 are patentable over the cited portions of Brueck, Takata and any proper combination thereof. Thus, reconsideration and withdrawal of the rejection of claims 8-13 under 35 U.S.C. 103(a) in view of Brueck and Takata are respectfully requested.

Claims 25-28 depend from claim 21, and, thus are considered patentable over Brueck at least by virtue of their dependency from claim 21, and for the additional features recited therein. As noted above, Brueck, Takata, and any proper combination thereof fail to disclose or teach a method comprising "measuring an amplitude of at least one order of a diffraction pattern resulting from interference between the second pattern and the projected image" as recited in claim 21.

Accordingly, Applicant respectfully submits that claims 25-28 are patentable over the cited portions of Brueck, Takata and any proper combination thereof. Thus, reconsideration and withdrawal of the rejection of claims 25-28 under 35 U.S.C. 103(a) in view of Brueck and Takata are respectfully requested.

The rejections having been addressed, Applicant respectfully submits that the application is in condition for allowance, and a notice to that effect is earnestly solicited.

If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

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Respectfully submitted,

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